REMARKS

Claims 1-3 and 5-10 remain pending in this application with claims.

Rejection of claims 1-3, 5 – 7 and 10 under 35 U.S.C. 103(a)

Claim 1-3, 5 – 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sasaki in view of Chen et al.

The present claimed invention recites a device and process for coding images according to the MPEG standard, for the insetting of at least one imagette into an image, utilizing the inter mode with motion estimation with respect to a reference image and the intra mode. An exclusion zone which includes the macroblocks which lie even partially in the location of the imagette is defined in the reference image. The motion estimation of the macroblocks of the image not belonging to the exclusion zone does not take account of an image block belonging to the exclusion zone in the reference image. The macroblocks of the reference image belonging to the exclusion zone being implemented through luminance values of these macroblocks are marked in order to perform said motion estimation. Macroblocks belonging to the exclusion zone of the image are then replaced by macroblocks making up the imagette. Independent claims 1 and 10 include similar limitations to those discussed above.

Specifically, claim 1 recites:

> "the motion estimation of the macroblocks of the image not belonging to the exclusion zone does not take account of an image block belonging to the exclusion zone in the reference image, marking of the macroblocks of the reference image belonging to the exclusion zone being implemented through luminance values of these macroblocks in order to perform said motion estimation..."

Sasaki discloses a picture signal encoding system capable of transmitting a motion picture at an extremely low rate while controlling the occurrence of a retransmission mode and the occurrence of a picture freeze. The encoder system integrally performs an alteration of the syntax, the substitute of the code word, the adaptive control for the prediction of the current frame encoding attribute based on the past encoding attribute and the attribute decision, the object area extraction based on the motion and a model, the area-separated quantization control, and the control of the necessary number of transformation coefficients according to the use modem the transmission rate and the motion occurrence quantity.

The Examiner cites Figure 46 of Sasaki along with column 11, lines 52 – 54 of the specification to show "marking of the macroblocks of the reference image belonging to the exclusion zone being implemented through luminance values of these macroblocks in order to perform said motion estimation". Applicant respectfully disagrees with the Examiner's assertion. Specifically, nowhere in the cited passage does Sasaki disclose the above claimed limitation. The present claimed invention discloses using "luminance values in order to perform said motion estimation", in other words, the luminance values "carry" information representing "the macroblocks of the reference image belonging to the exclusion zone". On the other hand, Figure 46 of Sasaki describes an area used for calculating the average motion vector. Applicant respectfully submits that this area is not analogous to and does not correspond with "an exclusion zone...in order to perform said motion estimation" as in the present claimed invention. In fact, the motion vectors disclosed by Sasaki are used for calculating an "average" and not "to perform said motion estimation" as claimed in claims 1 and 10 of the present invention.

Applicants further respectfully disagree with the Examiner's citation of column 11, lines 52 – 54 of Sasaki to support the conclusion that the color MTP is marked for the purpose of performing motion estimation, wherein the color MTP includes the luminance values. Sasaki recites in column 32, lines 38 – 40 that the object area may be labeled with MTP=2,3 and this MTP value is sent in the data stream. This MTP value cannot be compared with "a luminance value" as in the present claimed invention. Specifically, as the MTP is defined in the standard (ISO/IEC 13818-2 (MPEG-2)), a modification of the value, i.e. marking, to define areas is not possible. The problem with using the solution disclosed by Sasaki to solve the problem solved by the present claimed invention is manifested at the decoding side because the fields defined by the standard for this MTP must be processed as described therein.

Furthermore, the color MTP does not include the "luminance values" as in the present claimed invention. Specifically, Sasaki only discloses a color compensation on the basis of color information, including luminance, of previously decoded macroblocks in column 11, lines 52 - 54. This is a well known method for implementing a differential or inter-decoding using "color information compensation means" of a block from a previously decoded area and "motion compensation means" for motion compensation of this area. For example, Figure 33 provides information about the content of the MTP. However, as can be seen, Sasaki neither discloses nor suggests that the content of the MTP includes information regarding "luminance values" of pixels making up the macroblocks. This is further emphasized when looking at paragraph 6.3.17.1 of the ISO/IEC 13818-2 Standard which discloses information regarding macroblocks. Tables B2 – B8 of the standard clearly show that there is no luminance information available in the MTP of Sasaki. Thus, Sasaki neither discloses nor suggests "marking of the macroblocks of the reference image belonging to the exclusion zone being implemented though luminance values of these macroblocks in order to perform said motion estimation" as in the present claimed invention.

Additionally, Sasaki discloses an "area specification means" which "specifies an object area on the basis of area information data described in a user data area of the encoded bit stream data". Sasaki further defines the area by using user data fields in the bit stream. However, this is wholly unlike the solution presented in the present claimed invention for describing specific areas. In fact, the solution as disclosed in claims 1 and 10 of the present invention is advantageous in that "marking of the macroblocks of the reference image belonging to the exclusion zone being implemented though luminance values of these macroblocks in order to perform said motion estimation" is easy to perform because there is no need for using supplementary data to define the region. Moreover, as the motion estimation is performed as in the present claimed invention is done so using "luminance values", it is extremely beneficial and practical to use the "luminance values" to define an exclusion zone as this exclusion relates to the motion estimation.

Chen discloses a technique for implicitly encoding shape information by using a chroma-key color. Similarly to Sasaki, Chen neither discloses nor suggests "marking of the macroblocks of the reference image belonging to the exclusion zone being implemented through luminance values of these macroblocks in order to perform said motion estimation" as claimed in claims 1 and 10 of the present invention.

Applicants further respectfully submit that the combination of the process disclosed by Sasaki with the technique of Chen would not result in the process as disclosed by the present claimed invention. Specifically, Sasaki and Chen neither disclose nor suggest "marking of the macroblocks of the reference image belonging to the exclusion zone being implemented through luminance values of these macroblocks in order to perform said motion estimation" as in the present claimed invention.

Claim 5 states in pertinent part:

> "...wherein the marking consists in performing a transcoding of the luminance values of the macroblocks by decrementing the values equal to the maximum coding value and then by forcing the luminance values of the macroblocks belonging to the exclusion zone to this maximum value."

Neither Sasaki nor Chen disclose or suggest "transcoding of the luminance values of the macroblocks by decrementing the values equal to the maximum coding value and then by forcing the luminance values of the macroblocks belonging to the exclusion zone to this maximum value" as claimed in claim 5 of the present invention. Transcoding as claimed in claim 5 in conjunction with the "marking of the macroblocks of the reference image belonging to the exclusion zone being implemented though luminance values of these macroblocks in order to perform said motion estimation" results in a coding process and device that is greatly simplified over prior art processes and devices. Thus, applicant respectfully submits that Sasaki and Chen when taken alone or in combination neither disclose nor suggest the above transcoding step as claimed in claim 5 of the present invention.

In view of the above remarks and amendments to the claims, it is respectfully submitted that there is no 35 USC 112 compliant enabling disclosure in Sasaki or Chen showing the above discussed features. Therefore, it is respectfully submitted that the present invention as claimed in claims 1 and 10 is patentable over Sasaki in view of Chen. As claims 2, 3 and 5-7 are dependent on independent claim 1, it is also respectfully submitted that claims 2, 3 and 5-7 are patentable for the same reason as discussed above with respect to claim 1. Thus, it is further respectfully submitted that this rejection has been satisfied and should be withdrawn.

The Examiner stated in the Final Office Action that claims 8 and 9 are allowable. In view of the above remarks regarding claims 1-3, 5-7 and 10, it is respectfully submitted that all claims (Claims 1-3 and 5-10) are in condition for allowance.

Since the present claims set forth the present invention patentably and distinctly, and are not taught by the cited art either taken alone or in combination, this response is believed to place this case in condition for allowance and the Examiner is respectfully requested to reconsider the matter, and to allow all of the claims in this case.

Should the Examiner feel that anything further is necessary to place this application in condition for allowance he is respectfully requested to contact applicants attorney at the telephone number listed below.

No other fee is believed due. However, if an additional fee is due, please charge the fee to Deposit Account 07-0832.

Respectfully submitted,

Frédéric Plissonneau et al.

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CERTIFICATE OF MAILING

I hereby certify that this amendment is being deposited with the United States Postal Service as First Class Mail, postage prepaid, in an envelope addressed to Mail Stop AF, Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450 on:

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